## REMARKS

### I. Status of the Claims

Claims 11-16 are pending. Claims 1-10 were previously cancelled via preliminary amendment dated February 13, 2004. The cancellation of claims does not constitute acquiescence in the propriety of any rejection set forth by the Examiner. Applicants reserve the right to pursue the subject matter of the canceled claims in subsequent applications.

Claim 11 is currently being amended. Exemplary support for the amendment, which further characterizes the recited "variant" in terms of hybridization stringency, and which further makes clear that the recited polypeptide has tyrosine phosphatase activity, is found throughout the specification. *See, e.g.,* page 57, lines 4-9, and page 14, lines 16-31. Hence, Applicants respectfully request entry of the amendment because it does not introduce any new subject matter. Applicants also point out that these amendments are in line with those that Applicants made in their counterpart application, USSN 10/777,186, and which they believe places that application in condition for allowance.

### II. Response to Issues Raised by Examiner in the Outstanding Office Action

#### a. Claim Rejections - 35 U.S.C. § 112, Second Paragraph

Claims 11 and 14 are rejected by the Examiner under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite and under 35 U.S.C. § 112, first paragraph, for alleged lack of enablement and written description. Applicants respectfully request withdrawal of these rejections.

According to the Examiner, the recitation of "variant thereof" is indefinite, despite Applicants definition at pages 23-24 of the specification. Applicants respectfully disagree, but have amended claims 11 and 14 to make clear that the "variant" is a polypeptide that has an amino acid sequence encoded by a nucleic acid molecule that "hybridizes at 42°C in 50% formamide, 5X SSC, 25 mM KPO4, 5X Denhardt's, 10 μg/ml salmon sperm DNA and 10% sulfate followed by washing at 58°C in 0.1X SSC and 0.1% SDS to the complement of a nucleic acid molecule," which comprises the nucleotide sequence of either SEQ ID NO: 2 or SEQ ID NO: 4. Explicit support for this amendment is found at page 57, lines 4-9. This clarification makes clear what are the metes and bounds of the "variant" embodiment.

Applicants also believe that this amendment also clarifies what are certain phosphatase species contemplated by the claimed invention, namely polypeptides encoded by (A) the DNA

sequences of SEQ ID NOs: 2 and 4 and (B) the DNA of the recited and clarified "variant" nucleic acid molecule. As mentioned, these species are supported by the specification and therefore the specification does appropriately describe the claimed invention and is enabling for the claimed subject matter.

**b. Claim Rejections - 35 U.S.C. § 103**

Claims 11, 12, and 14-16 are rejected by the Examiner under 35 U.S.C. § 103 as being allegedly obvious over Charbonneau et al., PNAS, 86:5252-5256 (1989) ("Charbonneau"), or Streuli et al., PNAS 86:8698-8702 (1989) ("Streuli"). Applicants respectfully request reconsideration and withdrawal of the rejection.

The Examiner asserts that it would have been obvious for a person of ordinary skill in the art to use the RPTPs of Charbonneau or Streuli or the extracellular domain thereof in well known assays for identifying compounds which bind to a protein of interest in order to identify ligands of the receptor or other compounds which regulate the activity of the R-PTP protein. Applicants respectfully disagree. However, to expedite prosecution, Applicants have amended claim 11 to recite that the recited polypeptide is encoded by a specific DNA sequence, i.e., SEQ ID NO: 2 or 4, or by a nucleic acid molecule, defined by certain hybridization stringency criteria, as recited.

To establish a *prima facie* case of obviousness, there needs to be: (1) some suggestion or motivation to modify the reference or to combine reference teachings, (2) a reasonable expectation of success, and (3) the prior art references, when combined, must teach or suggest all the limitations of the claimed invention. *See* MPEP §2143 (Aug. 2001). "Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991). Applicants respectfully assert that the Examiner has not met this burden.

A *prima facie* case of obviousness has not been established by the Office because neither Charbonneau or Streuli teach or suggest the claimed polypeptides. As a result, Charbonneau or Streuli fail to teach or suggest all of the limitations of claimed invention. Therefore, the claimed invention is not obvious over Charbonneau or Streuli.

Claims 11-16 also are rejected under 35 U.S.C. § 103 as allegedly obvious in light of Matthews *et al.*, PNAS, 87:4444-4448 (1990) ("Matthews"). According to the Office, Matthews teaches a mouse RPTP protein that is identical to SEQ ID NO: 3. Matthews was published after the

filing date of the ancestral application, USSN 07/551,270, to which the present case claims priority, as acknowledged by the Examiner. According to the Examiner, however, the current claims "have not been accorded benefit of the filing date of this parent application as the parent application does not describe SEQ ID NO: 1." Office Action at page 9.

The skilled artisan, the Office says, would have been motivated to find compounds that would have bound to Matthews' RPTP protein. The methods for identifying such compounds are well known in the art. Therefore, it would have been obvious to one of skill in the art to use the RPTP of Matthews or the extracellular domain in those well known methods to identify ligands of the receptor or other compounds that regulate RPTP activity.

Applicants respectfully disagree. Matthews was concerned only with isolation and characterization of any additional family members of tyrosine phosphatases. Matthews screened under low stringency a mouse pre-B-cell cDNA library using the cDNA for the human tyrosine phosphatase leukocyte common antigen (LCA; CD45) as a probe. Matthews subsequently identified a clone, which he named "LRP" for "LCA-related phosphatase." See the abstract. Matthews then describes various sequences and comparisons made from sequence alignments with other phosphatases. See Figure 3 at page 4447. From this analysis, Matthews concludes that LRP is a "candidate molecule for presenting carbohydrates" and is "distinct from the transmembrane PTKases ... and may be involved in cell-cell interactions." See the last line of the last paragraph at page 4448.

Nowhere does Matthews mention that it would be desirous to identify a compound to modulate the activity of that described protein. From reading Matthews, the skilled artisan would not have been motivated to (a) obtain and express the LRP DNA sequence to produce a polypeptide, which he would then (b) contact with a compound, (c) remove unbound compounds, and then (d) assay for the presence of the compound bound to the LRP protein.

The existence of a well known screening method at the time Matthews was published would not have provided, in and of itself, any motivation to apply that method to a protein whose sequence was predicted by analysis of a cloned DNA. There was no link between Matthews' characterization of an alleged new PTKase family member and a screening method, which would have prompted the skilled person to subject Matthews' LRP protein to a screening method to identify compounds that might regulate its activity. At best, Matthews describes a predicted amino acid sequence of a PTKase, which bears certain conservation to other phosphatases based on an alignment of the translated and predicted protein sequence. Applicants do not believe that such a description would

have created in the mind of the skilled artisan a desire to make the protein and subject it to the claimed method. For at least this reason, Applicants assert that the claims are not obvious and respectfully request withdrawal of the rejection.

**c. Issues Under Double Patenting**

Claims 11-16 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claim 11 of copending Application No. 10/777,186. Applicants thank Examiner Prouty for calling the undersigned to relate that claim 11 of the '186 application is allowable. Accordingly, Applicants submit herewith an appropriate terminal disclaimer in the present case and in the USSN 10/777,186 counterpart application, thereby removing the double-patenting rejection.

## CONCLUSION

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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